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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,697	10/16/2003	Paul A. Kohl	62020-1550	7668

7590 02/04/2010
Paul Reznick, Esq.
THE WEBB LAW FIRM
700 Koppers Building
436 Seveth Avenue
Pittsburgh, PA 15219

EXAMINER

LEE, SIN J

ART UNIT	PAPER NUMBER
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1795

MAIL DATE	DELIVERY MODE
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02/04/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/686,697	Applicant(s) KOHL ET AL.	
	Examiner Sin J. Lee	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9, 14-17, 20-22 and 28-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9 and 14-17 is/are allowed.
- 6) ☒ Claim(s) 20-22 and 28-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In view of the amendment, previous 102(b) rejection on claims 20-22 over Kohl et al'890 is hereby withdrawn.
2. Due to terminal disclaimers, previous double patenting rejections over App.'539 and App.'144 are hereby withdrawn.
3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Claim Rejections - 35 USC § 102

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claims 20-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Bhusari et al ("Fabrication of Air-Channel Structures for Microfluidic,

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Microelectromechanical, and Microelectronic Applications”, Journal of Microelectromechanical Systems, Vol.10, No.3, pg.400-408).

Bhusari teaches multilevel air-channels encapsulated in SiO₂ (see Fig.9). Fig.11 shows air-channel overcoated with photosensitive polyamic ester (PI-2734) displaying curving up of the overcoat. Fig.13 shows air-channels fabricated between copper lines that are insulated from the air-channel. All these structures teach present structure comprising three-dimensional air-regions having non-rectangular cross-sections. Thus, Bhusari teaches present inventions of claims 20-22.

6. Claims 20-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Gravesen et al (“Microfluidics-a review”, J. Micromech. Microeng. 3 (1993), pg.168-182).

Gravesen’s structure shown in his Fig.8 teaches present structure comprising three-dimensional air-regions having non-rectangular cross-sections. Thus, Gravesen teaches present inventions of claims 20-22.

7. Claims 20-22 and 28-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Vaughan (2,568,475).

Vaughan teaches a toy para-rocket shown in Fig.1, which contains a cavity that has a tapered shape. Since present claims are product-by-process claims, Vaughan teaches present inventions of claims 20-22 and 28-33.

8. Claims 20-22 and 28-33 are rejected under 35 U.S.C. 102(e) as being anticipated by Srinivasan (US 6,334,863 B1).

Srinivasan teaches (see Fig.1, col.2, lines 40-46) a medical device having a flexible, silicone rubber tube having an enclosed, hollow space which as a tapered shape. Thus, Srinivasan teaches present inventions of claims 20-22 and 28-33.

Allowable Subject Matter

9. Claims 9 and 14-17 are allowed. None of the cited prior arts teaches or suggests present polymer composition of claim 9 or present fabrication method of claim 14.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is 571-272-1333. The examiner can normally be reached on Monday-Friday from 9:00 am EST to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Sin J. Lee/
Primary Examiner, Art Unit 1795
February 1, 2010